

A NEW SPECIES OF *KALLIAPSEUDES*  
(CRUSTACEA: TANAIDACEA: KALLIAPSEUDIDAE)  
FROM TRINIDAD

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*Abstract.* — A new species of kalliapseudid tanaidacean, *Kalliapseudes soniadawnae*, is described from three specimens collected from the silty-clay benthos in 8–10 m of water in the Gulf of Paria, off the northwest coast of Trinidad. The new species is similar to congeners from the Bahamas and the Pacific coast of Mexico, but can be distinguished by its stouter limb and antennal articles, and elongate dactyli of pereopods 2 and 3. It is unique in bearing a stout pectinate spine on the basis of pereopod 1.

Kalliapseudid tanaidaceans have been described previously from the Atlantic coasts of Central and South America. Lang (1956) established the family and described several species from Brazil, while most recently Sieg (1982) described *Kalliapseudes* (*Mesokalliapseudes*) *bahamensis* from the Caribbean. In Trinidad waters, Bacescu & Gutu (1975) described *Discapseudes surinamensis* from the Caroni Swamp on the northern west coast. The present material was collected in 1982 during a study of the benthos off the Port-of-Spain coastal area, Trinidad, in the Gulf of Paria (Agard 1984). Three specimens of a hitherto undescribed kalliapseudid were taken from two separate sites.

With this limitation on the quantity of material, only one specimen was dissected and mounted for microscopical examination; the holotype (which was missing its antennae) and one male paratype were examined whole; consequently features of the detailed anatomy (e.g., the mouthparts) relate only to the success of the single dissection and details of, for example, the epignath must await further material. The conspicuous distinction of the new species does not, however, depend on any such subtleties.

The specimens had little sclerotization and

long setae were commonly not straight. All figures were drawn with the aid of the camera lucida and represent the anatomy as it exists, rather than any stylized symmetrical interpretation.

The type material is lodged at the National Museum of Wales, Cardiff, UK (NMW).

#### Description

Order Tanaidacea Hansen, 1895  
Suborder Apseudomorpha Sieg, 1980  
Family Kalliapseudidae Lang, 1956  
*Kalliapseudes* (*Mesokalliapseudes*)  
*soniadawnae*, new species

*Material.* — One ♀, 6 mm long, Holotype (NMW.Z.1991.099.1); one ♂, 3.4 mm long, Paratype (NMW.Z.1991.099.2), both from Station F4, 10 m depth, 28.5°C, salinity 20‰, pH 7.35. One ♂, 6 mm long, mounted in polyvinyl lactophenol, Paratype (retained in the collection of the author), Station D4, 8.5 m depth, 26°C, 29‰, pH 6.79. These sampling stations were situated 2 to 3 km off the Diego Martin shore, Trinidad, approximately 10°40'N 61°35'W, 9 Aug 1982, in silty-clay, collected by John Agard.

*Body.* — (Fig. 1A) elongate (6-times as long as wide), unpigmented, with little sclerotization.

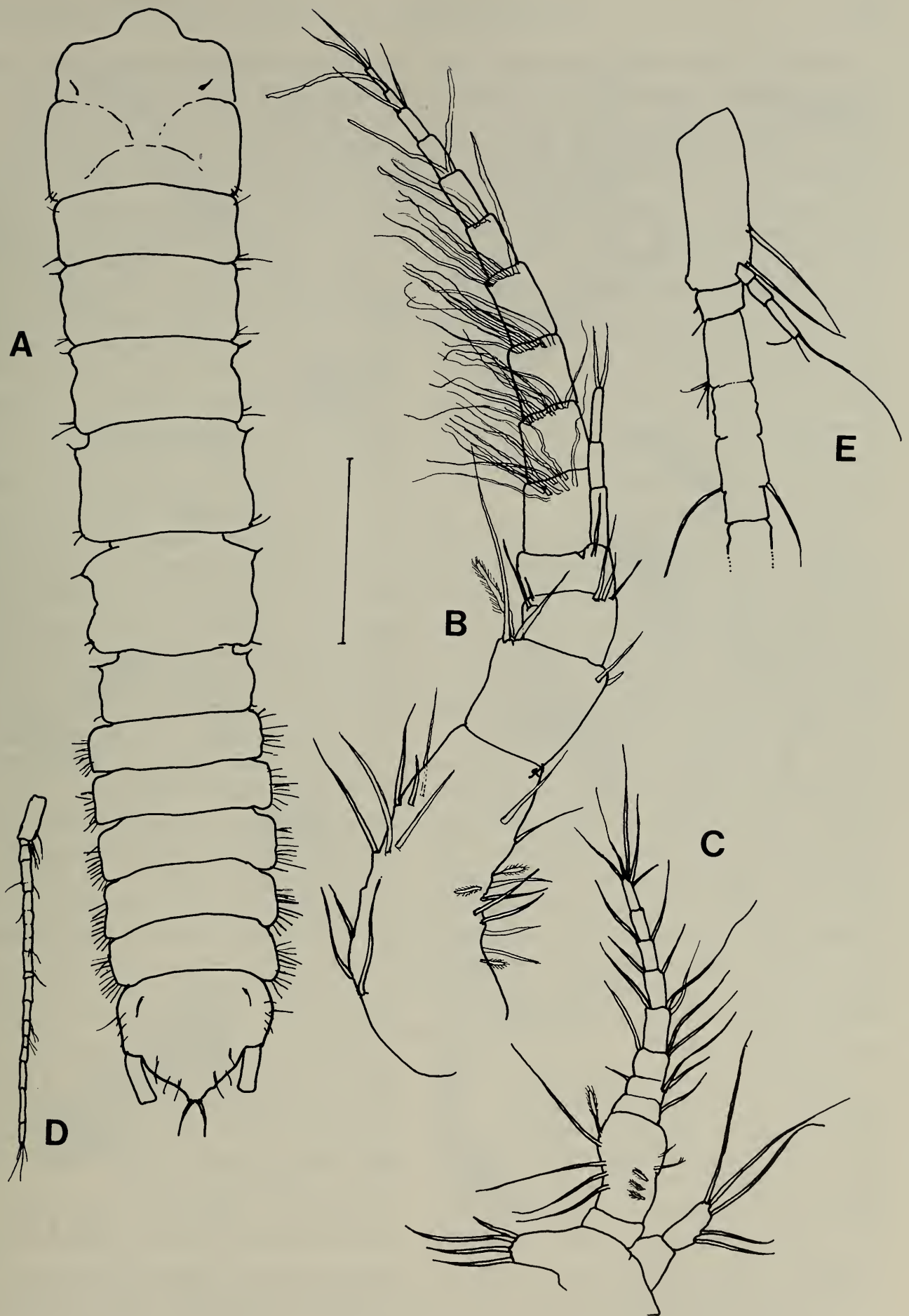


Fig. 1. *Kalliapseudes soniadawnae*. A. Holotype female, body, dorsal. B. Paratype male, antenna 1. C. Paratype male antenna 2. D. Uropod, entire and E. Basal articles, holotype female. Scale line 1 mm for A and D, 0.2 mm for B, C and E.

*Cephalon*. — Wider than long, longer than first two pereonites together, with a distinct semicircular rostrum, no eyes, a single anterior dorsolateral seta and a pair of posterolateral setae on each side. Pereonites 1 to 5 increasing in length, pereonite 6 the shortest; each pereonite with 1 anterolateral and 1 or 2 posterolateral setae, the former on a triangular extension on pereonites 2 to 6. Five free pleonites, of similar length, with 8 (pleonite 1) to 11 (pleonite 5) lateral setae; each pleonite bearing pleopods. Pleotelson (Figs. 1A, 4A) wider than long, with a pair of terminal setae, 3 posterior setae on each side of these, and 6 lateral setae on each side anterior to uropod insertion; 1 pair of anterior dorsolateral setae.

*Male antennule*. — (Antenna 1) (Fig. 1B) peduncle 4-articled; first article less than 3 times as long as wide; second as long as wide; third and fourth wider than long, with setation as figured. Accessory flagellum arising on fourth peduncle article and consisting of 3 articles; third article bearing 2 distal setae. Main flagellum of 10 articles; first as long as wide, succeeding articles progressively longer in relation to their width; tenth article 5 times as long as wide; eighth and tenth articles with 2 and 3 distal setae, respectively; flagellum articles 1 to 4 with dense rows of 6 to 10 aesthetascs distally; articles 5 and 6 bearing paired aesthetascs and article 9 with a single aesthetasc. Female antennule basal peduncle article of similar proportions to that of the male; other articles not available.

*Antenna*. — (Antenna 2) (Fig. 1C) second article with a lateral extension bearing 4 setae, third article with an articulated "squama" with 5 setae; fourth article naked; fifth setose as figured. Flagellum of 8 articles; second to sixth articles with single tergal and 1 or 2 sternal distal setae; eighth article with 4 long and 1 short distal setae. No conspicuous sexual dimorphism.

*Mouthparts*. — Labrum (Fig. 2C) simple, setose; labium with very setose distal lobe (Fig. 2E) wider than long. Mandibular palps

uniarticulate; left mandible (Fig. 2A) incisor process with a large distal tooth and a row of 5 smaller teeth appearing to connect to the lacinia mobilis, itself with paired distal teeth, lamina with 5 distal setae; right mandible (Fig. 2B) with a simple incisor process with 2 or 3 teeth, lacinia mobilis reduced or absent (not seen), lamina with 5 distal setae. Maxilla 1 (maxillule) (Fig. 2D) inner endite with 4 distal setae, outer endite setose with a crown of 9 distal spines. Maxilla 2 (Fig. 2F) inner lobe with 4 plumose setae on its outer lobe and 7 fine and 2 stout setae on its inner lobe; endite distally with 4 wide pectinate setae and 8 finer setae in 2 rows; outer lobe with a wide plumose seta within a row of 20 finer distal setae, and 3 short lateral spines. Maxilliped (Fig. 2G) endite typical for the subgenus, with a pair of coupling hooks, all outer setae plumose; inner edge with 3 simple setae and 6 comb-rows; remaining articles furnished on their inner margins with 2 parallel rows of plumose filtering setae; 2 distal setae on the distal article. Epignath not seen in preparation.

*Cheliped*. — (Fig. 4C) long, slender filtering structure typical of subgenus; basis 2.5 times as long as wide with a single distal sternal seta; merus with 3 distal sternal setae, carpus with 2 sternal rows of 42 and 32 filtering setae. Propodus slender (6 times as long as wide) with a row of 16 filtering setae, proximal ones as long as carpal filtering setae; distally 3 rostral, 1 tergal and 8 caudal simple setae a little longer than half length of dactylus; distal finger extending only slightly in sternal direction, half as long as dactylus and with a serrated terminal spine and 4 inner teeth. Dactylus with serrated distal spine, a group of 3 mid-tergal setae and a row of 7 sternal setae.

*Pereopods*. — Pereopod 1 (P1) (Fig. 3A) proximal articles with few setae, but with a conspicuous distal tergal pectinate spine on the basis; distal articles with complex setation and spination (Fig. 3G); merus, carpus and propodus armed distally with 1, 2 and 3 stout spines tergally and 0, 1 and 2

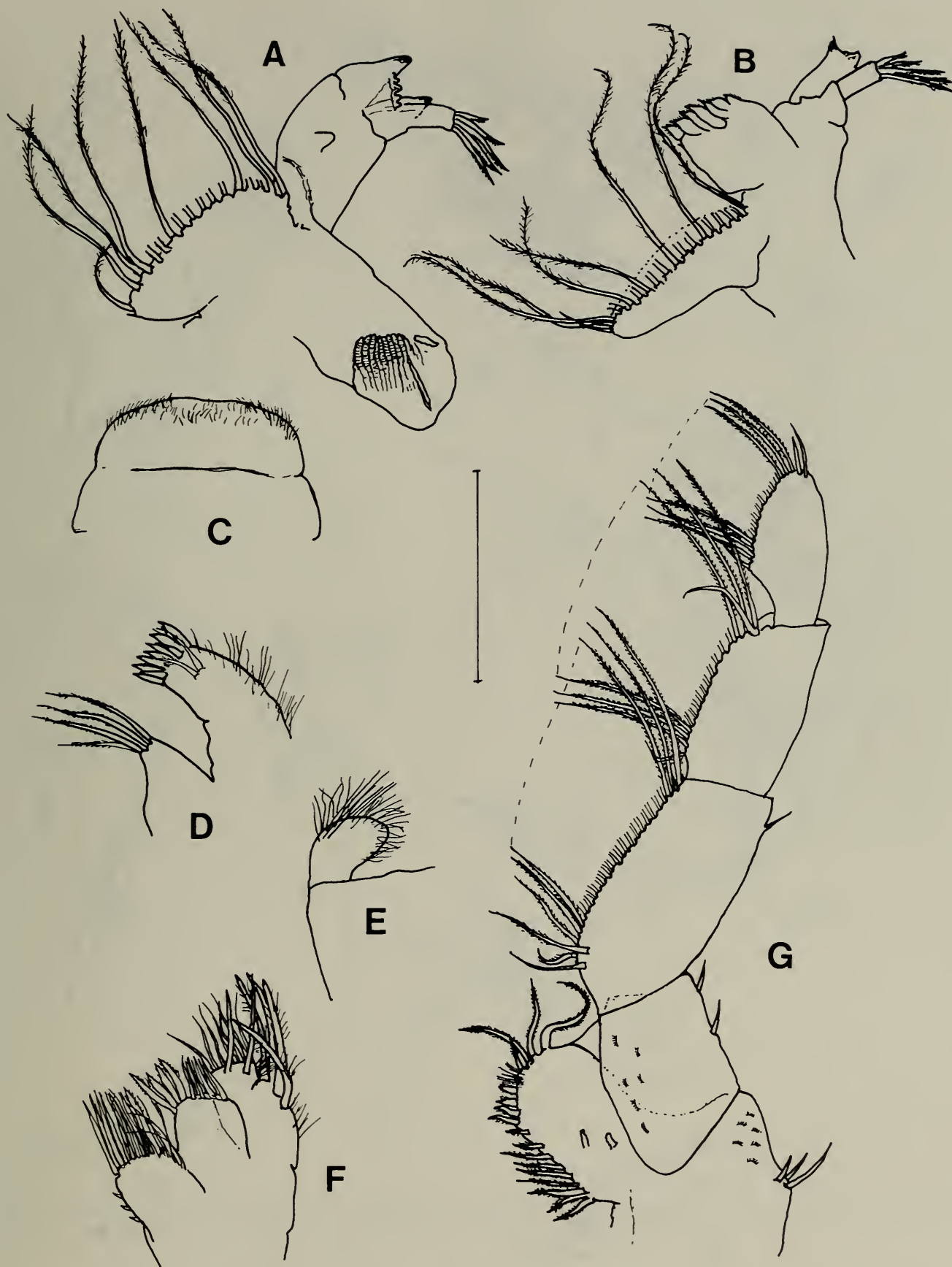


Fig. 2. *Kalliapseudes soniadae*, mouthparts of paratype male. A. Left mandible. B. Right mandible. C. Labrum. D. 1st maxilla. E. Distal lobe of labium. F. 2nd maxilla. G. Maxilliped. Scale line is 0.2 mm.

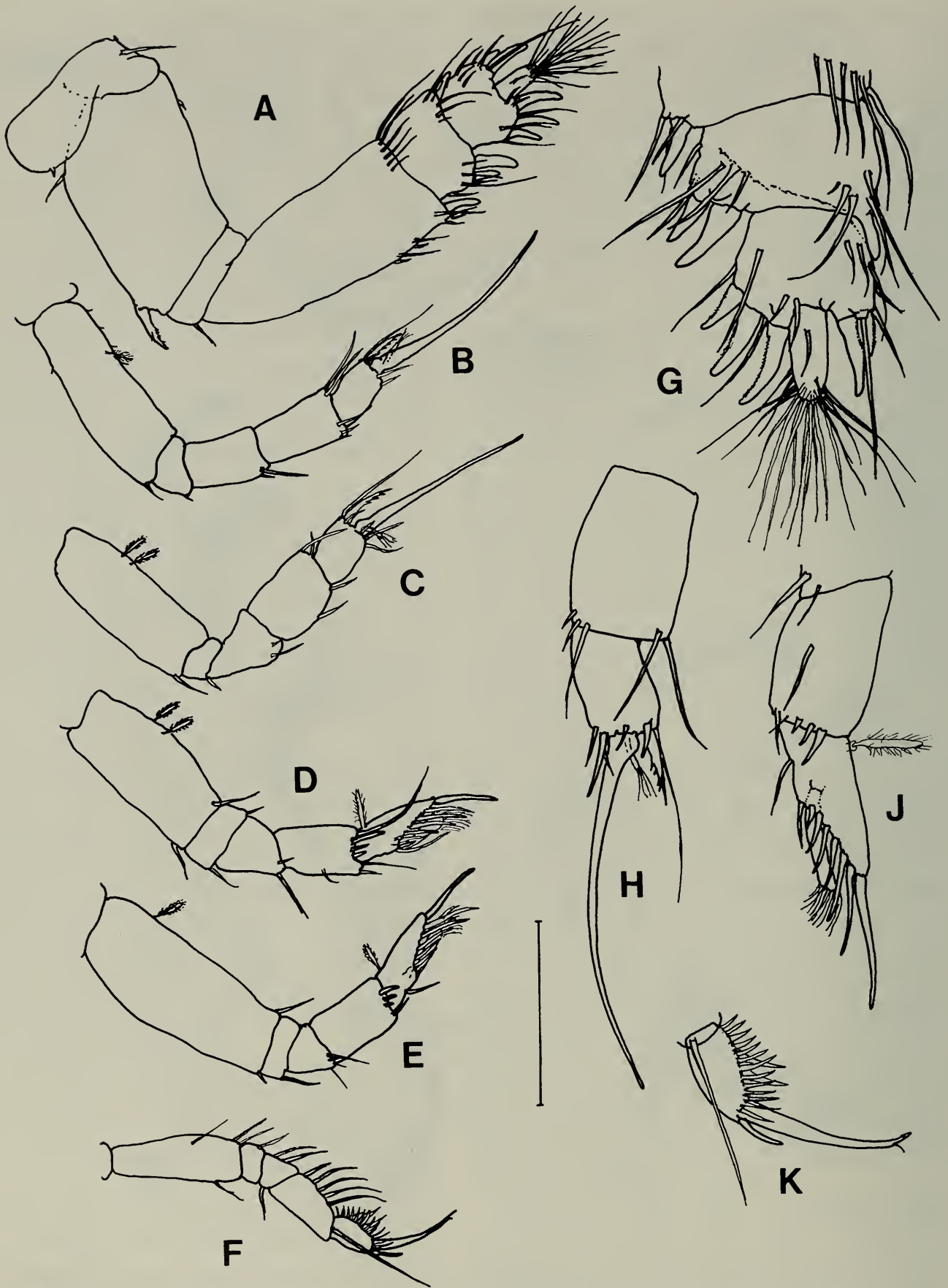


Fig. 3. *Kalliapseudes soniadae*, pereopods of paratype male. A to F. Pereopods 1 to 6, respectively. G to K. Distal articles of pereopods 1, 2, 5 and 6, respectively. Scale line 0.4 mm for A to F, 0.2 mm for G to K.

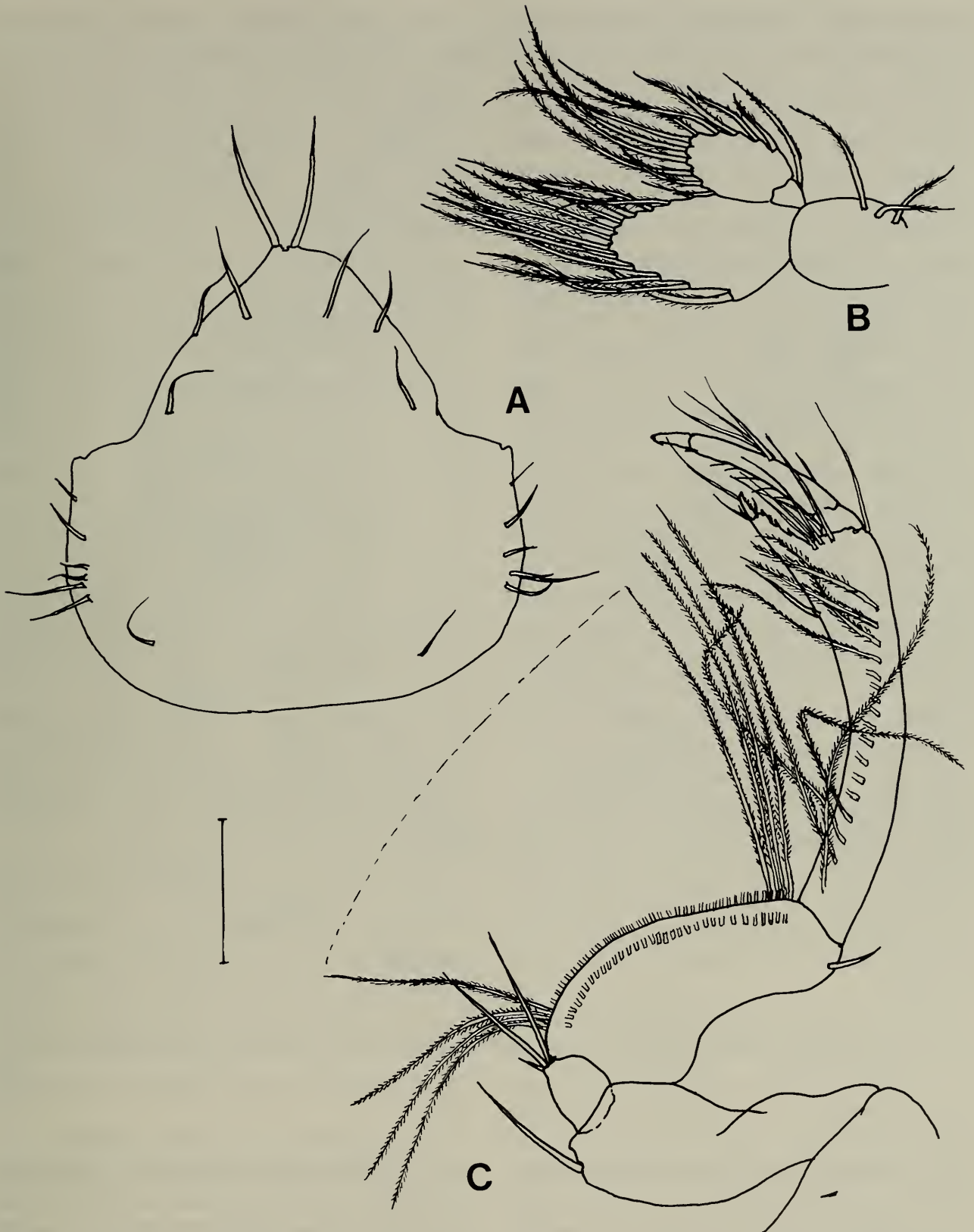


Fig. 4. *Kalliapseudes soniadae*. A. Pleotelson of holotype female, dorsal. B. Pleopod (twisted) of paratype male. C. Cheliped of paratype male. Scale line 0.26 mm for A, 0.2 mm for B and C.

spines sternally, respectively; dactylus blunt and distally heavily setose (ca. 20 setae). P2 (Fig. 3B) with merus and carpus similarly proportioned, with parallel sides and nearly twice as long as wide; dactylus very long, 1.4 times length of carpus and propodus together, with sensory "brush" at its base and an adjacent toothed spine; setation and spination of distal articles as in Fig. 3H. P3 (Fig. 3C) similar to P2; merus subtriangular; carpus only 1.5 times as long as wide; dactylus 1.4 times length of carpus and propodus together. P4 (Fig. 3D) and P5 (Figs. 3E, 3J) similar to each other; carpus distally with a row of 3 small spines on both caudal and rostral edges; propodus with 2 parallel combs of 7 spines of progressively increasing length from proximal (tergal) to distal (sternal) edges; dactylus a blunt, setose sensory organ. P6 (Figs. 3F, 3K) carpus with a tergal row of 5 long setae and a long distal seta 1.8 times length of propodus; propodus with 2 tergal "sole-" spines and an adjacent comblike row of 14 smaller spines; dactylus 1.75 times length of propodus.

*Pleopod.* — (Fig. 4B) basis with 3 setae; endopod first article with a single seta; second article and exopod less than twice as long as broad, with 11 and 12 setae, respectively. Uropod (Figs. 1D, 1E) biramous, almost as long as pleon; endopod with 3 articles, exopod with numerous articles (15 to 18), some irregular.

Male specimens with conspicuous genital cone on sternum of pereonite six, showing no obvious (without dismemberment) significant differences in cheliped or antennal morphology (one would not expect the dense tufts of aesthetascs on the proximal articles of the female antennule main flagellum). All three type specimens had a cone-like ventral process on the sternum of pleonite 1.

*Etymology.* — This most attractive species is named after the marine biologist Sonia Dawn Batten.

#### Remarks

*Kalliapseudes soniadawnae* is clearly close to both *K. viridis* Menzies, 1953, from the

Pacific coast of Mexico, and *K. bahamensis* Sieg, 1982 from the Bahamas. With the former it shares the rectangular pereonites with anterolateral "triangular" spine-bearing processes (a distinction between these described species emphasized by Sieg 1982) and a single seta on the first pleopodal endopod article; with the latter it shares few caudolateral setae on the telson and long dactyli on pereopods two and three (although these are even longer in proportion to the combined length of carpus and propodus in the present species — 1.4 times — than in *K. bahamensis* — 1.2 times). These long dactyli and the distinct rounded rostrum, better developed than in either of the other two species, are distinguishing features of *K. soniadawnae* evident from whole-animal observation. Equally, the new species has stouter articles on its limbs and antennae, is generally less setose (although the filtering setae of the propodus of the cheliped are as long as those of the carpus in *K. soniadawnae*, proximally shorter *K. viridis* and in *K. bahamensis*), and, uniquely, a heavy pectinate spine on the distal tergal corner of the basis of pereopod 1 (only a long simple seta in the other two species).

Examination of 76 paratypes of *K. bahamensis*, kindly loaned by the National Museum of Natural History, Washington (USNM 181901) revealed that, despite the description in Sieg (1982), nearly half of these specimens were male with genital cones. This allowed the examination of sexual dimorphism and variability in this species.

The antennae of a male paratype of *K. bahamensis* are shown in Fig. 5. Antenna 1 has stouter articles than those of the female, and bears dense tufts of aesthetascs on the proximal 5 articles of the main flagellum. In addition, the distal setae on the propodus of the male cheliped are elaborately pectinate, being largely simple in the female (and simple in the male of *K. soniadawnae*). There is no other conspicuous sexual dimorphism. The proportions of the articles of antenna 2 are similar in both sexes (as in *K. sonia-*

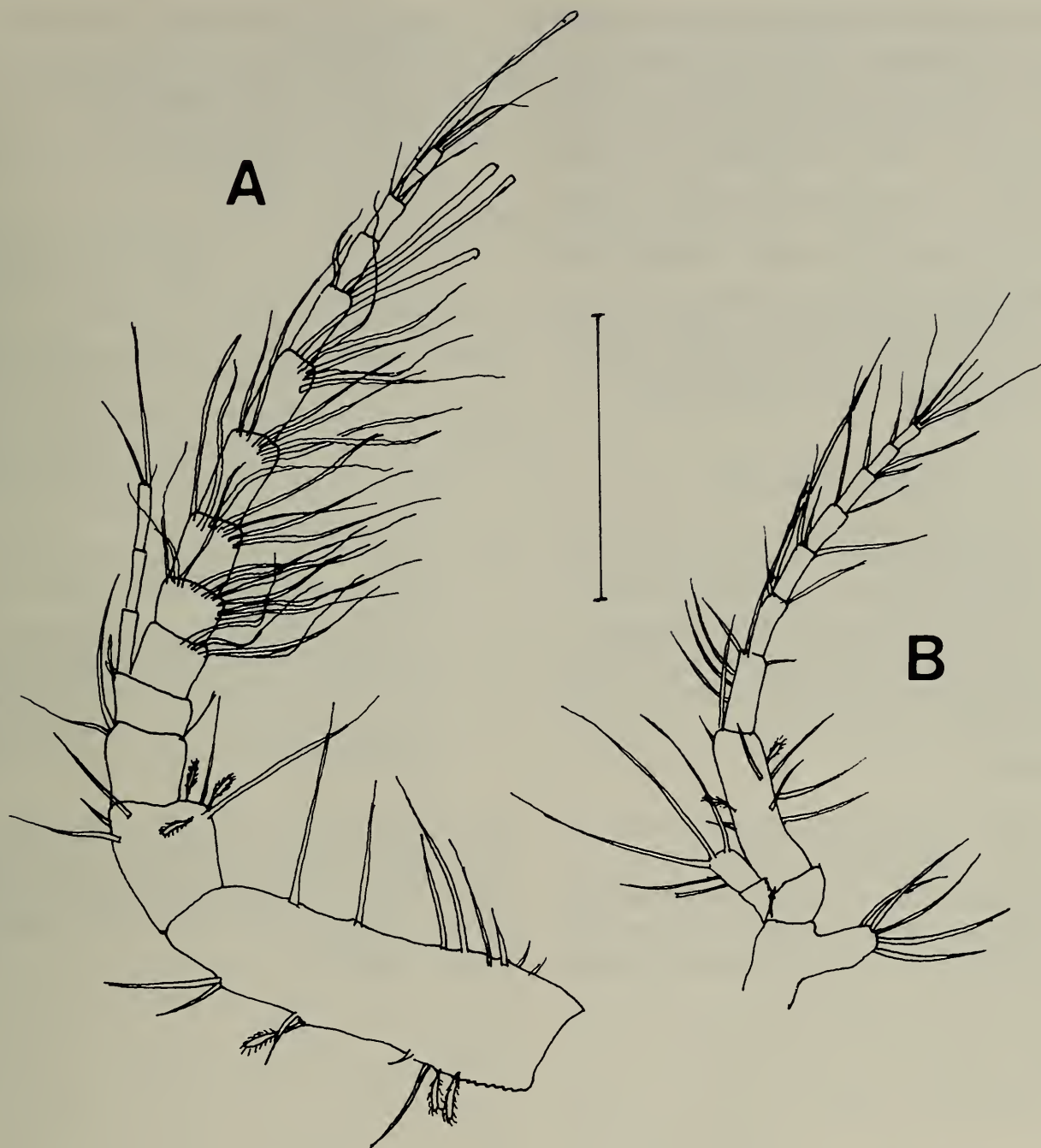


Fig. 5. *Kalliapseudes bahamensis*. A. Antenna 1, male paratype. B. Antenna 2, male paratype. Scale line 0.3 mm.

*dawnae*); it is therefore reasonable to assume that the males of *K. viridis* will have slender antenna 2 articles as found in the female, and distinct from the more robust morphology of *K. soniadawnae*.

Variability in the lengths of the dactyli of pereopods 2 and 3 was analyzed by measuring them in comparison to the length of the adjacent, shorter toothed spine (see Fig 3H). This proportion showed no significant difference between the two limbs. In *K. ba-*

*hamensis* the dactyl was 3 times the length of the adjacent spine (mean from 10 specimens 2.95, range 2.6 to 3.4) while in *K. soniadawnae* the dactyl was 4 times the spine length (mean from all three specimens 4.12, range 3.75 to 4.45). In *K. viridis* this proportion is about 2 (e.g., Sieg 1982:fig. 7).

Thus, of these three closely related species, *K. bahamensis* is immediately distinguishable by its characteristic trapezoidal pereonite morphology, in having more than



10 sternal setae on the cheliped dactylus and its uropod basis exceeding the posterior tip of the telson by about one-third of its length. The remaining two zoogeographically isolated species have rectangular pereonites, less than 10 sternal setae on the cheliped dactylus and uropod basal articles not or only just exceeding the telson. They are distinguishable by the heavy spine on the basis of pereonite 1, the elongate dactyli of pereonites 2 and 3 and the stouter antennal articles shown only by *K. soniadaewnae*.

#### Acknowledgments

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